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SPECIFICATION

PART NO. : LPHMN3-HM-UDR3-S01

5.0 x 5.0mm SMD TYPE

ATTENTION

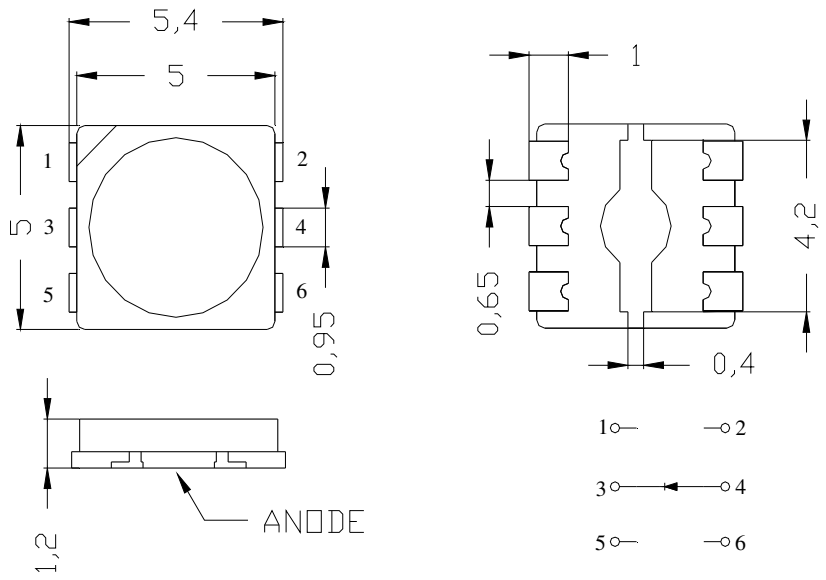
OBSERVE PRECAUTION FOR HANDLING ELECTRO STATIC SENSITIVE DEVICES

Approved by	Checked by	Prepared by
王方波	王耀毅	蘇智良

MODIFY RECORD

TAKE EFFECT DATE	MODIFY ISSUES	REMARKS

Package Dimensions



Notes:

1. All dimensions are in mm.
2. Tolerance is ±0.25mm unless otherwise noted.

Description

Part No.	LED Chip		Lens Color
	Material	Emitting Color	
LPHMN3-HM-UDR3-S01	InGaN/Metal Alloy	White	Yellow Diffused

Absolute Maximum Ratings at Ta=25 ℃

Parameter	Symbol	Rating	Unit
Power Dissipation	Pd	1330	mW
Reverse Voltage	Vr	5	V
D.C. Forward Current	If	350	mA
Peak Current(1/10Duty Cycle,0.1ms Pulse Width.)	If(Peak)	700	mA
Operating Temperature Range	Topr.	-40 to +85	℃
Storage Temperature Range	Tstg.	-40 to +100	℃
Soldering Temperature	Tsld.	Reflow Soldering: 260℃ for 10 sec. Hand Soldering: 350℃ for 3 sec.	
Electric Static Discharge Threshold (HBM) ★	ESD	6000	V

Electrical and Optical Characteristics:

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Luminous Flux	Φv	If=350mA	72	90		lm
Luminous Intensity	Iv	If=350mA		28		cd
Efficiency	η	If=350mA		78		lm/W
Forward Voltage	Vf	If=350mA		3.3	3.8	V
CIE Chromaticity Coordinates: X Axis	X	If=350mA		0.33		
CIE Chromaticity Coordinates: Y Axis	Y	If=350mA		0.35		
Correlated Colour Temperature	CCT	If=350mA	5000	-	6000	°K
Color Rendering Index	CRI	If=350mA		74		*Ra*
Reverse Current	Ir	Vr=5V	-	-	100	μA
Viewing Angle	2θ 1/2	If=350mA		120		deg
Thermal Resistance Junction to Case	$R\theta_{J-C}$	If=350mA		15		℃/W

Notes: 1.The datas tested by IS tester.

2. Customer's special requirements are also welcome.

Specifications for Bin Grading: (IF=350mA.Ta=25℃)

lm		
Bin	**Min**	**Max**
Rank U1	**72**	**83**
Rank U2	**83**	**96**
Rank V1	**96**	**113**
Rank V2	**113**	**134**

Specifications for Vf Group: (IF=350mA.Ta=25℃)

Vf(V)		
Bin	**Min**	**Max**
3	**3.0**	**3.2**
4	**3.2**	**3.4**
5	**3.4**	**3.6**
6	**3.6**	**3.8**

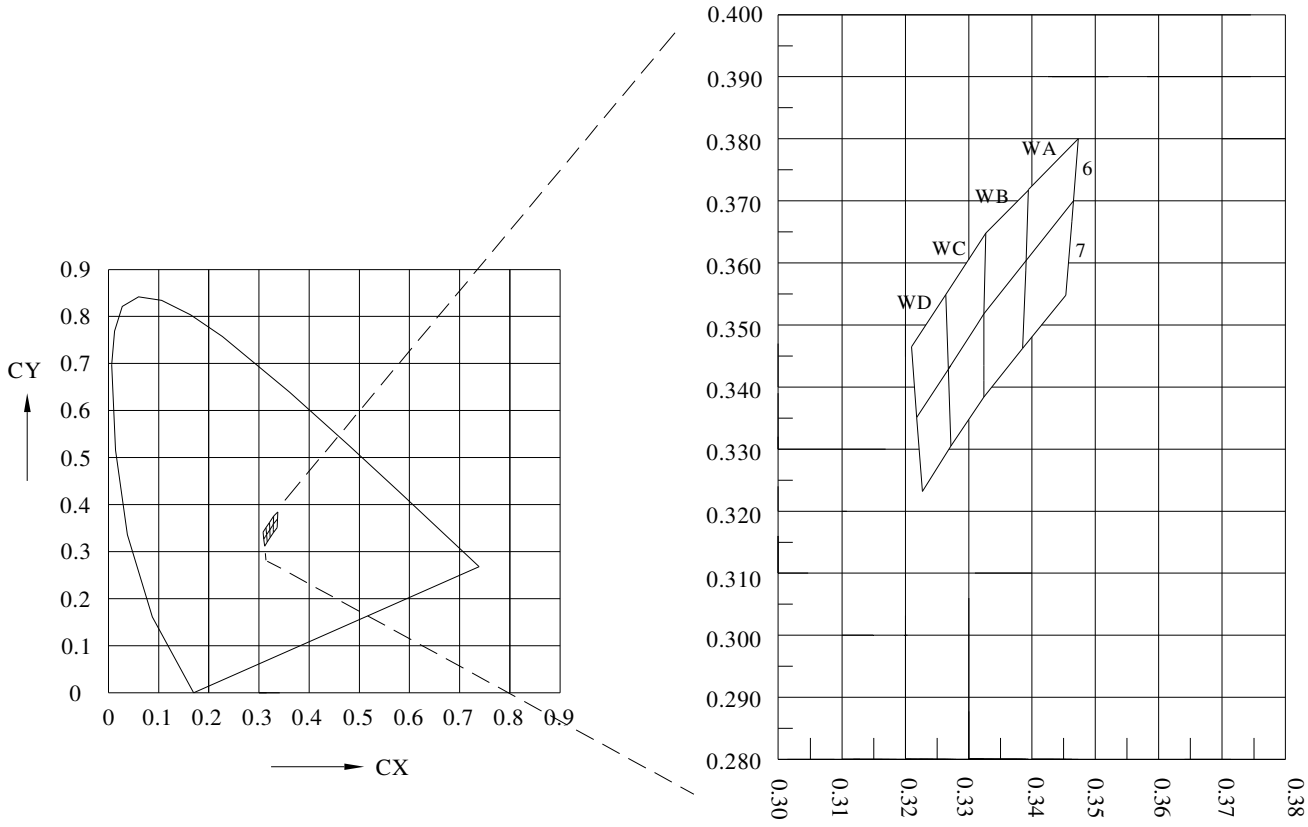
Chromaticity Coordinates Specifications for Bin Grading:

COLOR RANKS (IF=350mA.Ta=25℃)

BIN	RANK					BIN	RANK				
WA6	X	0.3394	0.3473	0.3463	0.3390	WA7	X	0.3390	0.3463	0.3453	0.3385
	Y	0.3719	0.3800	0.3670	0.3591		Y	0.3591	0.3670	0.3550	0.3465
WB6	X	0.3327	0.3394	0.3390	0.3324	WB7	X	0.3324	0.3390	0.3385	0.3324
	Y	0.3650	0.3719	0.3591	0.3519		Y	0.3519	0.3591	0.3465	0.3388
WC6	X	0.3264	0.3327	0.3324	0.3268	WC7	X	0.3268	0.3324	0.3324	0.3272
	Y	0.3551	0.3650	0.3519	0.3430		Y	0.3430	0.3519	0.3388	0.3305
WD6	X	0.3210	0.3264	0.3268	0.3218	WD7	X	0.3218	0.3268	0.3272	0.3227
	Y	0.3468	0.3551	0.3430	0.3353		Y	0.3353	0.3430	0.3305	0.3233

Note: X.Y Tolerance each Bin limit is±0.01.

Chromaticity Coordinates & Bin grading diagram:



Typical Electrical/Optical Characteristic Curves
(25℃ Ambient Temperature Unless Otherwise Noted)

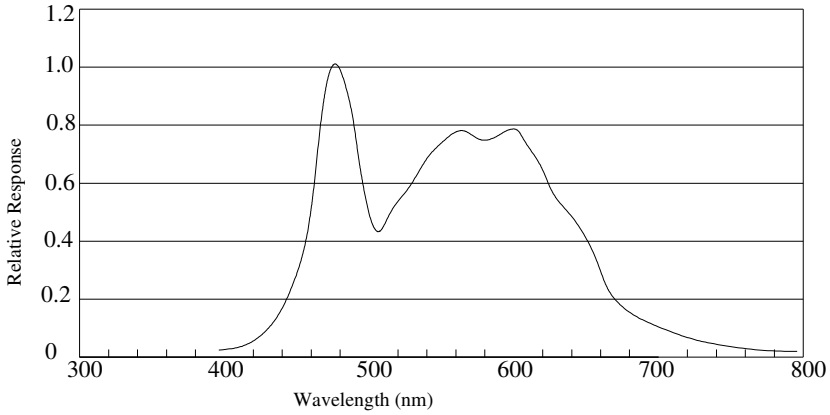
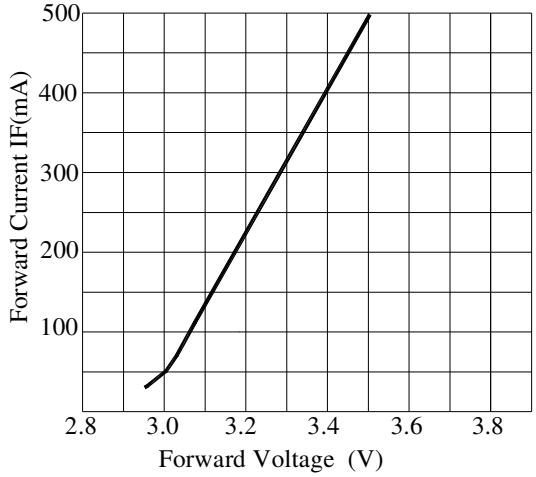
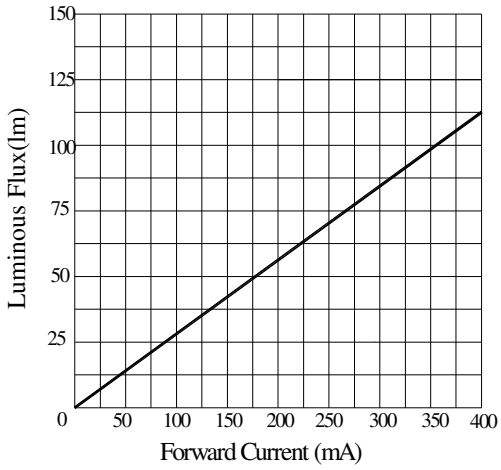


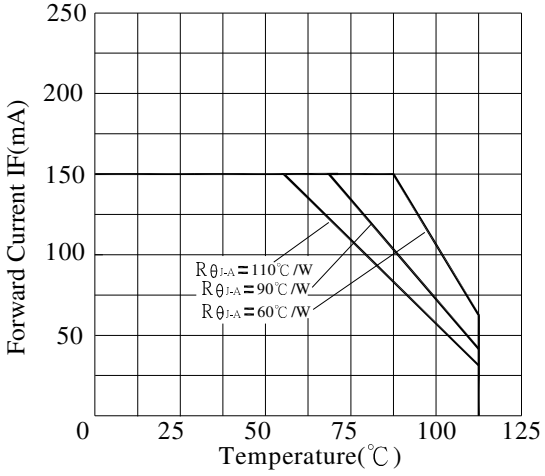
Fig.1 RELATIVE LUMINOUS INTENSITY



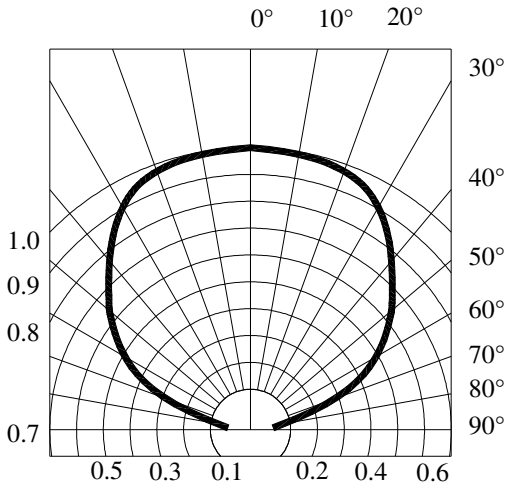
Forward Current VS. Forward Voltage



Forward Current VS. Luminous Intensity



Ambient Temperature VS. Forward Current



Radiation Diagram

PRECAUTION IN USE

Storage

Recommended storage environment

Temperature: 5°C ~ 30°C (41°F ~ 86°F)

Humidity: 60% RH Max.

Use within 7 days after opening of sealed vapor/ESD barrier bags.

If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions.

Baking treatment : 60±5℃ for 24 hours.

Fold the opened bag firmly and keep in dry environment.

Soldering

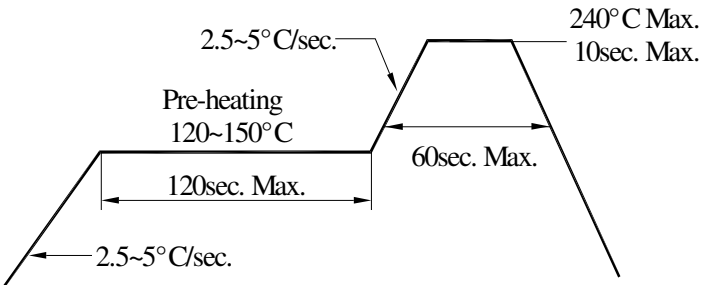
Reflow Soldering			Hand Soldering	
	Lead Solder	Lead – free Solder		
Pre-heat	120~150℃	180~200℃	Temperature	350℃ Max.
Pre-heat time	120sec. Max.	120sec. Max.	Soldering time	3sec. Max. (one time only)
Peak temperature	240℃ Max.	260℃ Max.		
Soldering time	10sec. Max.	10sec. Max.		
Condition	refer to Temperature-profile 1	refer to Temperature-profile 2		

***After reflow soldering rapid cooling should be avoided.**

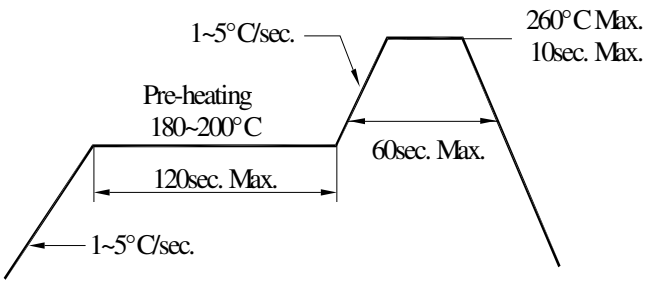
[Temperature-profile (Surface of circuit board)]

Use the conditions shown to the under figure.

＜1 : Lead Solder＞

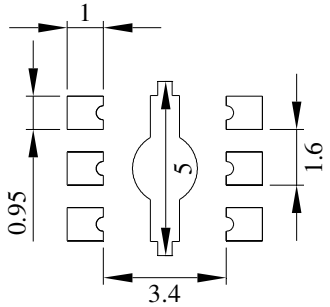


＜2 : Lead-free Solder＞



[Recommended soldering pad design]

Use the following conditions shown in the figure.



Unit:mm

Handling of Silicone Resin LEDs

Handling Indications

During processing, mechanical stress on the surface should be minimized as much as possible. Sharp objects of all types should not be used to pierce the sealing compound

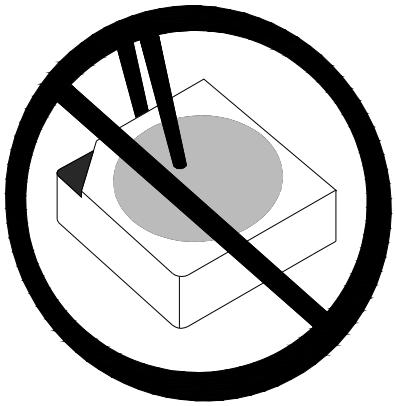


Figure 1

In general, LEDs should only be handled from the side. By the way, this also applies to LEDs without a silicone sealant, since the surface can also become scratched.

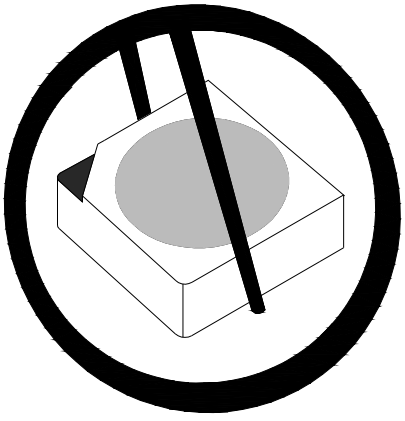


Figure 2

When populating boards in SMT production, there are basically no restrictions regarding the form of the pick and place nozzle, except that mechanical pressure on the surface of the resin must be prevented.
This is assured by choosing a pick and place nozzle which is larger than the LED's reflector area.